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ABSTRACT

This study examined 38 thematic units prepared by preservice elementary teachers at the end of their science methods class and their second semester in an urban, field-based program, investigating how they addressed principles of diversity and multiculturalism. The units had either a science theme or science integrated with themes from other disciplines. The multicultural component was analyzed using Banks' Dimensions of Multicultural Education and Approaches to Multicultural Education (which include five dimensions of multicultural education and four levels of multicultural curriculum reform). Gender and ethnicity were also examined. Of the 45 predominantly female students who completed units, 14 were African American, 5 were Hispanic American, 3 were Asian American, and 23 were Anglo-American. Results indicated that students attempted to integrate multicultural approaches in their lessons to various degrees. Of the 38 students who addressed multiculturalism or diversity, 6 demonstrated equity pedagogy and 32 demonstrated content integration; 3 demonstrated both content integration and equity pedagogy; and 1 demonstrated content integration with knowledge construction. Students did not apply any levels above level 2 on Banks' typology of multicultural approaches. Most students used level 1, the contributions approach. Students preferred the curriculum approach of content integration more than any other approach. (SM)

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Applications of "Multiculturalism" Demonstrated by Elementary Preservice Science Teachers

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Applications of "Multiculturalism" Demonstrated by Elementary Preservice Science Teachers

Diversity increasingly characterizes the population of the United States and specifically the larger states. Texas has seen an increase in its minority population, which has impacted public education and public schools. Public schools and many teacher preparation programs have made many attempts to address this demographic change. Recognizing this, in 1990, Texas state policy makers launched unprecedented initiatives to address this deficiency. Their first focus was on public schools and their second focus was on teacher preparation programs.

To enhance quality and ensure equity in teacher preparation programs, Texas implemented three initiatives. The first was the establishing of the Center for Professional Development of Teachers (CPDT) in 1992; the second was to emphasize the importance of quality of professionals in the learner-centered schools; and thirdly the state focused on the accountability system for teacher preparation (SBEC, 1998). Diversity was addressed under the second initiative that dealt with quality professionals in public schools. There were five state proficiencies established for teachers and equity was addressed in one of those proficiencies. The *Equity in Excellence Proficiency* reads:

> "The teacher responds appropriately to diverse groups. The teacher not only respects and is sensitive to all learners but also encourage the use of all their skills and talents. As the facilitator of learning, the teacher models and encourages appreciation for students' cultural heritage, unique endowments, learning styles, interests, and needs. The teacher also designs learning experiences that show consideration for these student characteristics.

> Because the teacher views differences as opportunities for learning, cross-cultural experiences are an integral part of the learner-centered community. In addition, the teacher establishes a relationship between the curriculum and community cultures. While making this connection, the teacher and students explore attitudes that foster unity. As a result, the teacher creates an environment in which learners work cooperatively and purposefully using a variety of resources to understand themselves, their immediate community, and the global society in which they live" (SBEC, 1997, p.6).

The authors of this monograph believed that preservice teachers could not address the principle of diversity alone but that it must be addressed throughout and with the implementation of the other four principles which are: Learner-Centered Knowledge, Learner-Centered Instruction, Learner-Centered Communication, and Learner-Centered Professional Development (SBEC, 1997). They recognized that equity and diversity were multidimensional concepts. Banks' dimensions of multicultural education reinforce that multicultural education is a complex and multidimensional concept that encompasses diversity and equity. The dimensions like the equity principle are meant to show that multicultural education is more than content integration.

There are five dimensions of multicultural education: content integration, knowledge construction process, prejudice reduction, an equity pedagogy, and an empowering school culture and social structure (Banks & Banks, 1995). *Content integration* encompasses the extent to which teachers use culturally relevant examples, data, and information from a variety of cultures and groups to illustrate key concepts, principles, generalizations, and theories in their subject areas or disciplines. The

knowledge construction process involves the procedure by which social, behavioral, and natural scientists create knowledge, and the manner in which the implicit cultural assumption, frames of reference, perspective, and biases influence the ways that knowledge is constructed within each discipline. *Prejudice reduction* describes the characteristics of children's racial attitudes and suggests strategies that can help students develop more democratic attitudes and values. *Equity pedagogy* consists of using techniques and methods that facilitate the academic achievement of students from diverse racial, ethnic, and social class groups. *Empowering school culture and social structure* is used to describe the process of restructuring the school's culture and organization so that students from diverse racial, ethnic, and social-class groups will experience educational equality (Banks & Banks, 1995).

Banks also looks at approaches to multicultural curriculum reform. He has four levels: the contributions approach, the additive approach, the transformation approach, and the social action approach. The contributions approach is appropriately label as level one for it focuses on heroes, holidays, and discrete cultural elements. The second level is the additive approach in which content, concepts, themes, and perspectives are added to the curriculum without changing its structure. Level 3 is the Transformation Approach in which the structure of the curriculum is changed to enable students to view concepts, issues, events, and themes from the perspective of diverse ethnic and cultural groups. The last and final level is level 4, the transformation level. On this level, students make decisions on important social issues and take actions to help solve them (Banks, 1995). The dimensions and approaches correlate well with the Equity in Excellence Proficiency for Texas teachers.

Preservice teachers in this study are enrolled in an urban teacher preparation program. As a requirement they must take a multicultural course which employs James Banks' (1995) text. They are also exposed to term, philosophy, applications of multiculturalism, and the modeling of teaching culturally relevant lessons for three semesters. Yet, after three semesters of this exposure, when students are given the opportunity to include multiculturalism in their lessons, many do not reflect upon the culture of their students and examples given to them in their preservice classes. Their preference is to choose a global element of multiculturalism versus a local or ethnic application. "Global" is defined as a continent, country or location out of the community of the students and "local" refers to the community, school, and members of a designated classroom.

Sample and Methodology

This study examines 38 thematic units prepared by preservice elementary teachers at the end of their science methods class and their second semester in an urban field-based teacher education program. I examined 45 thematic units. The other seven units were prepare by groups of veteran students in a graduate level curriculum theory class. The units either had a science theme or had science integrated with a theme from another discipline. The multicultural component was analyzed and critiqued using Banks' (1995) Dimensions of Multicultural Education and his Approaches to Multicultural Education. Other variables examined included gender, and ethnicity. The data were analyzed using frequencies and other descriptive statistics.

Results

Individual students did forty-five of the units and seven units were prepared by groups of students. Of the forty-five individuals, fourteen were African Americans, five were Hispanics, three were Asian, and twenty-three were Anglo-Americans. There were three males and forty-two females (see Table 1). One Anglo male, two African American females, two Anglo females, one Asian female and one Hispanic female did not address diversity or multiculturalism at all in their units. None of the students demonstrated Level 3, the transformation approach, or Level 4, the social action approach from Bank's typology of approaches to multicultural curriculum reform. There were eight female students who wrote their unit on the second level, the Additive Approach. Two of those students were African American, one was Hispanic, and five were Anglo-Americans. Twenty-nine wrote their lesson(s) at level 1, the Contributions Approach (see Figure 1). The two African American males wrote theirs at Level 1, the contribution approach.

Of the thirty-eight students that addressed multiculturalism or diversity in their units, six demonstrated equity pedagogy and thirty-two demonstrated content integration; three demonstrated both content integration with equity pedagogy while one demonstrated content integration with knowledge construction. Those three who used equity pedagogy with content integration were African American females and the one with knowledge construction was an Anglo female (see Figure 2).

The seven groups were veteran teachers enrolled in a graduate level Curriculum Theory class. Five groups (71%) demonstrated Level 2, the Additive Approach, in their units while only one demonstrated Level 3, the Transformation Approach, and two demonstrated Level 1, the Contribution Approach. Under the dimensions of

multiculturalism, equity pedagogy was demonstrated in two of the units, content integration with equity pedagogy in one; knowledge construction in two; equity pedagogy with an empowering school curriculum was seen in one, and content integration alone was seen in one.

Conclusion

This study concludes that the undergraduate preservice students did not apply any levels above 2 on Banks' typology of Multicultural Approaches. The majority of the students (71%) used Level 1, the Contributions Approach. They (84%) also preferred the Curriculum Approach of Content Integration more than any other approach. The study also showed that students are attempting to integrate multicultural approaches in their lessons to various degrees. It was shown that the graduate groups of veteran teachers applied multicultural approaches and curriculum approaches on the same level as the undergraduate students.

Implications

This study has several implications for preservice teachers, professors and teacher education programs. Programs should evaluate themselves to see if they are teaching their students to address diversity at the local level and in an effective manner. Baptiste & Key (1996) used a model to aid science departments and teacher education programs to evaluate themselves to see at what level they were teaching their students. The typology has 3 levels from the product (awareness, artifacts) through the process (prejudice reduction, cultural inclusion) to the philosophical orientation (beliefs, advocates) level. If students are only taught on one level or professors only know or exercise their knowledge on one level, students will portray the same.

Sometimes it is not the program or professors but the students. Ladson-Billings (1994) stated that prospective teachers do not easily relinquish beliefs and attitudes about themselves or others. The students in this study may not be able to relinquish old behaviors and beliefs. Ladson-Billings shared several ideas on how to foster the kind of attitude needed to teach African-American children, which included:

1. recruit teacher candidates who have expressed an interest and a desire to work with African American students;
2. provide educational experiences that help teachers understand the central role of culture;
3. provide teacher candidates with opportunities to critique the system in ways that will help them to choose a role as either agent of change or defender of the status quo;
4. systematically require teacher candidates to have prolonged immersion in African-American culture;
5. provide opportunities for observation of culturally relevant teaching; and
6. provide student teaching over a longer period of time and in a more controlled environment.

Tiedt and Tiedt (1999) states that teachers need to know how to use the best of teaching strategies- questioning, cooperative learning, engaging students in active hands-on learning activities. They need to select methods and materials that will involve students in thinking about real issues that affect their daily lives. Yet, not very many of our multicultural textbooks share lessons and exercises that take the students to level 4,

the Social Action Approach of Bank's multicultural approaches. As seen in the sample, there is a gap, for there is a lack of great application by the preservice teachers.

It seems to be more of a lack of application and not the lack of knowledge due to the requirements of all teachers in the sample. Foster (1997) in *Black Teachers on Teaching* shows that the older black teachers particularly in segregated schools were known to discuss issues that related to the student lives. It was a part of the teaching to carry the lesson to the Transformation Approach and the Issue Action Approach. Considering that the majority of teachers in the field and in this sample is of a different culture or ethnic group than the public school students, the preservice teachers may not know how and when to teach on Levels 3 and 4. Those in the sample either ignored those levels or did not know how to integrate these approaches for they have been taught these approaches before.

If we are going to affect changes in public schools and public education to address the increased in students of color and to effectively educate them, then preservice teachers must be given opportunities to apply multicultural approaches on levels 3 and 4 and Curriculum Approaches beyond Content Integration. Particularly, Texas preservice teachers must address the requirements in the Equity for Excellence Principle for being an effective teacher involves applying equity for excellence for all students all the time.

Table 1

Undergraduate Demographics

Ethnicity	Gender		Total
	Males	Females	
African American	2	12	14
Anglo-American	1	22	23
Asian American	0	3	3
Hispanic American	0	5	5

n = 45

Figure 1

Selection of Multicultural Approaches

Ethnicity	Gender	Level 1	Level 2	Level 3	Level 4
African American	male	2			
African American	Female	5	2		
Anglo American	Male				
Anglo American	Female	17	5		
Asian American	Female	2			
Hispanic American	Female	3	1		

Figure 2

Selection of Curriculum Approaches

Ethnicity	Gender	Content Integration	Equity Pedagogy	Empowering School Culture	Prejudice reduction	Knowledge Construction Process	Total
African American	Male	1	1				2
African American	Female	7 (3*)	3*				10
Anglo - American	Male						0
Anglo - American	Female	18 (2*)	2	1*		1*	20
Asian American	Female	2					2
Hispanic American	Female	4					4
TOTAL		32	6	1*	0	1*	38

(* means that it has already been counted and students integrated more than one category)

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